



077-US1.ST25.txt
SEQUENCE LISTING

<110> Paz Einat, Louis Deiss and Ruth Maya

<120> ATRX and uses thereof

<130> 68300-A;077/US1

<140> Not Yet Known

<141> 2003-10-30

<150> US 60/422,557

<151> 2002-10-31

<160> 6

<170> PatentIn version 3.2

<210> 1

<211> 7479

<212> DNA

<213> Homo sapiens

<220>

<221> CDS

<222> (1)..(7479)

<400> 1

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1				5					10					15		

aag	ctt	cat	gac	ttc	ctt	gca	cac	tca	tca	gaa	gaa	tct	gaa	gaa	aca	96
Lys	Leu	His	Asp	Phe	Leu	Ala	His	Ser	Ser	Glu	Glu	Ser	Glu	Glu	Thr	
			20					25					30			

agt	tct	cct	cca	cga	ctt	gca	atg	aat	caa	aac	aca	gat	aaa	atc	agt	144
Ser	Ser	Pro	Pro	Arg	Leu	Ala	Met	Asn	Gln	Asn	Thr	Asp	Lys	Ile	Ser	
		35				40						45				

ggc	tct	gga	agt	aac	tct	gat	atg	atg	gaa	aac	agc	aag	gaa	gag	gga	192
Gly	Ser	Gly	Ser	Asn	Ser	Asp	Met	Met	Glu	Asn	Ser	Lys	Glu	Glu	Gly	
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act	agc	tct	tca	gaa	aaa	tcc	aag	tct	tca	gga	tcg	tca	cga	tca	aag	240
Thr	Ser	Ser	Ser	Glu	Lys	Ser	Lys	Ser	Ser	Gly	Ser	Ser	Arg	Ser	Lys	
65					70					75					80	

agg	aaa	cct	tca	att	gta	aca	aag	tat	gta	gaa	tca	gat	gat	gaa	aaa	288
Arg	Lys	Pro	Ser	Ile	Val	Thr	Lys	Tyr	Val	Glu	Ser	Asp	Asp	Glu	Lys	
				85					90					95		

cct	ttg	gat	gat	gaa	act	gta	aat	gaa	gat	gcg	tct	aat	gaa	aat	tca	336
Pro	Leu	Asp	Asp	Glu	Thr	Val	Asn	Glu	Asp	Ala	Ser	Asn	Glu	Asn	Ser	
			100					105						110		

gaa	aat	gat	att	act	atg	cag	agc	ttg	cca	aaa	ggc	aca	gtg	att	gta	384
Glu	Asn	Asp	Ile	Thr	Met	Gln	Ser	Leu	Pro	Lys	Gly	Thr	Val	Ile	Val	

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115	120	125	
cag cca gag cca gtg ctg aat gaa gac aaa gat gat ttt aaa ggg cct Gln Pro Glu Pro Val Leu Asn Glu Asp Lys Asp Asp Phe Lys Gly Pro 130 135 140			432
gaa ttt aga agc aga agt aaa atg aaa act gaa aat ctc aaa aaa cgc Glu Phe Arg Ser Arg Ser Lys Met Lys Thr Glu Asn Leu Lys Lys Arg 145 150 155 160			480
gga gaa gat ggg ctt cat ggg att gtg agc tgc act gct tgt gga caa Gly Glu Asp Gly Leu His Gly Ile Val Ser Cys Thr Ala Cys Gly Gln 165 170 175			528
cag gtc aat cat ttt caa aaa gat tcc att tat aga cac cct tca ttg Gln Val Asn His Phe Gln Lys Asp Ser Ile Tyr Arg His Pro Ser Leu 180 185 190			576
caa gtt ctt att tgt aag aat tgc ttt aag tat tac atg agt gat gat Gln Val Leu Ile Cys Lys Asn Cys Phe Lys Tyr Tyr Met Ser Asp Asp 195 200 205			624
att agc cgt gac tca gat gga atg gat gaa caa tgt agg tgg tgt gcg Ile Ser Arg Asp Ser Asp Gly Met Asp Glu Gln Cys Arg Trp Cys Ala 210 215 220			672
gaa ggt gga aac ttg att tgt tgt gac ttt tgc cat aat gct ttc tgc Glu Gly Gly Asn Leu Ile Cys Cys Asp Phe Cys His Asn Ala Phe Cys 225 230 235 240			720
aag aaa tgc att cta cgc aac ctt ggt cga aag gag ttg tcc aca ata Lys Lys Cys Ile Leu Arg Asn Leu Gly Arg Lys Glu Leu Ser Thr Ile 245 250 255			768
atg gat gaa aac aac caa tgg tat tgc tac att tgt cac cca gag cct Met Asp Glu Asn Asn Gln Trp Tyr Cys Tyr Ile Cys His Pro Glu Pro 260 265 270			816
ttg ttg gac ttg gtc act gca tgt aac agc gta ttt gag aat tta gaa Leu Leu Asp Leu Val Thr Ala Cys Asn Ser Val Phe Glu Asn Leu Glu 275 280 285			864
cag ttg ttg cag caa aat aag aag aag ata aaa gtt gac agt gaa aag Gln Leu Leu Gln Gln Asn Lys Lys Lys Ile Lys Val Asp Ser Glu Lys 290 295 300			912
agt aat aaa gta tat gaa cat aca tcc aga ttt tct cca aag aag act Ser Asn Lys Val Tyr Glu His Thr Ser Arg Phe Ser Pro Lys Lys Thr 305 310 315 320			960
agt tca aat tgt aat gga gaa gaa aag aaa tta gat gat tcc tgt tct Ser Ser Asn Cys Asn Gly Glu Glu Lys Lys Leu Asp Asp Ser Cys Ser 325 330 335			1008
ggc tct gta acc tac tct tat tcc gca cta att gtg ccc aaa gag atg Gly Ser Val Thr Tyr Ser Tyr Ser Ala Leu Ile Val Pro Lys Glu Met 340 345 350			1056
att aag aag gca aaa aaa ctg att gag acc aca gcc aac atg aac tcc			1104

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Ile	Lys	Lys	Ala	Lys	Lys	Leu	Ile	Glu	Thr	Thr	Ala	Asn	Met	Asn	Ser		
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tct	gct	aca	aaa	tta	cgt	cag	ctt	aag	gct	ttt	aag	tct	gtg	ttg	gct	1200	
Ser	Ala	Thr	Lys	Leu	Arg	Gln	Leu	Lys	Ala	Phe	Lys	Ser	Val	Leu	Ala		
	385				390					395					400		
gat	att	aag	aag	gct	cat	ctt	gca	ttg	gaa	gaa	gac	tta	aat	tcc	gag	1248	
Asp	Ile	Lys	Lys	Ala	His	Leu	Ala	Leu	Glu	Glu	Asp	Leu	Asn	Ser	Glu		
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ttt	cga	gcg	atg	gat	gct	gta	aac	aaa	gag	aaa	aat	acc	aaa	gag	cat	1296	
Phe	Arg	Ala	Met	Asp	Ala	Val	Asn	Lys	Glu	Lys	Asn	Thr	Lys	Glu	His		
			420					425					430				
aaa	gtc	ata	gat	gct	aag	ttt	gaa	aca	aaa	gca	cga	aaa	gga	gaa	aaa	1344	
Lys	Val	Ile	Asp	Ala	Lys	Phe	Glu	Thr	Lys	Ala	Arg	Lys	Gly	Glu	Lys		
	435						440					445					
cct	tgt	gct	ttg	gaa	aag	aag	gat	att	tca	aag	tca	gaa	gct	aaa	ctt	1392	
Pro	Cys	Ala	Leu	Glu	Lys	Lys	Asp	Ile	Ser	Lys	Ser	Glu	Ala	Lys	Leu		
	450					455					460						
tca	aga	aaa	cag	gta	gat	agt	gag	cac	atg	cat	cag	aat	gtt	cca	aca	1440	
Ser	Arg	Lys	Gln	Val	Asp	Ser	Glu	His	Met	His	Gln	Asn	Val	Pro	Thr		
	465				470				475						480		
gag	gaa	caa	aga	aca	aat	aaa	agy	acc	ggt	ggt	gaa	cat	aag	aaa	tct	1488	
Glu	Glu	Gln	Arg	Thr	Asn	Lys	Xaa	Thr	Gly	Gly	Glu	His	Lys	Lys	Ser		
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gat	aga	aaa	gaa	gaa	cct	caa	tat	gaa	cct	gcc	aac	act	tct	gaa	gat	1536	
Asp	Arg	Lys	Glu	Glu	Pro	Gln	Tyr	Glu	Pro	Ala	Asn	Thr	Ser	Glu	Asp		
			500					505					510				
tta	gac	atg	gat	att	gtg	tct	gtt	cct	tcc	tca	gtt	cca	gaa	gac	att	1584	
Leu	Asp	Met	Asp	Ile	Val	Ser	Val	Pro	Ser	Ser	Val	Pro	Glu	Asp	Ile		
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Phe	Glu	Asn	Leu	Glu	Thr	Ala	Met	Glu	Val	Gln	Ser	Ser	Val	Asp	His		
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Gln	Gly	Asp	Gly	Ser	Ser	Gly	Thr	Glu	Gln	Glu	Val	Glu	Ser	Ser	Ser		
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gta	aaa	tta	aat	att	tct	tca	aaa	gac	aac	aga	gga	ggt	att	aaa	tca	1728	
Val	Lys	Leu	Asn	Ile	Ser	Ser	Lys	Asp	Asn	Arg	Gly	Gly	Ile	Lys	Ser		
				565				570						575			
aaa	act	aca	gct	aaa	gta	aca	aaa	gaa	tta	tat	gtt	aaa	ctc	act	cct	1776	
Lys	Thr	Thr	Ala	Lys	Val	Thr	Lys	Glu	Leu	Tyr	Val	Lys	Leu	Thr	Pro		
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gtt tcc ctt cct aat tcc cca att aaa ggt gct gat tgt cag gaa gtt Val Ser Leu Pro Asn Ser Pro Ile Lys Gly Ala Asp Cys Gln Glu Val	1824
595 600 605	
cca caa gat aaa gat ggc tat aaa agt tgt ggt ctg aac ccc aag tta Pro Gln Asp Lys Asp Gly Tyr Lys Ser Cys Gly Leu Asn Pro Lys Leu	1872
610 615 620	
gag aaa tgt gga ctt gga cag gaa aac agt gat aat gag cat ttg gtt Glu Lys Cys Gly Leu Gly Gln Glu Asn Ser Asp Asn Glu His Leu Val	1920
625 630 635 640	
gaa aat gaa gtt tca tta ctt tta gag gaa tct gat ctt cgg aga tcc Glu Asn Glu Val Ser Leu Leu Leu Glu Glu Ser Asp Leu Arg Arg Ser	1968
645 650 655	
cca cgt gta aag act aca ccc ttg agg cga ccg aca gaa act aac cct Pro Arg Val Lys Thr Thr Pro Leu Arg Arg Pro Thr Glu Thr Asn Pro	2016
660 665 670	
gta aca tct aat tca gat gaa gaa tgt aat gaa aca gtt aag gag aaa Val Thr Ser Asn Ser Asp Glu Glu Cys Asn Glu Thr Val Lys Glu Lys	2064
675 680 685	
caa aaa cta tca gtt cca gtg aga aaa aag gat aag cgt aat tct tct Gln Lys Leu Ser Val Pro Val Arg Lys Lys Asp Lys Arg Asn Ser Ser	2112
690 695 700	
gac agt gct ata gat aat cct aag cct aat aaa ttg cca aaa tct aag Asp Ser Ala Ile Asp Asn Pro Lys Pro Asn Lys Leu Pro Lys Ser Lys	2160
705 710 715 720	
caa tca gag act gtg gat caa aat tca gat tct gat gaa atg cta gca Gln Ser Glu Thr Val Asp Gln Asn Ser Asp Ser Asp Glu Met Leu Ala	2208
725 730 735	
atc ctc aaa ggg gtg agc agg atg agt cac agt tct tct tca gat act Ile Leu Lys Gly Val Ser Arg Met Ser His Ser Ser Ser Ser Asp Thr	2256
740 745 750	
gat att aat gaa att cat aca aac cat aag act ttg tat gat tta aag Asp Ile Asn Glu Ile His Thr Asn His Lys Thr Leu Tyr Asp Leu Lys	2304
755 760 765	
act cag gcg ggg aaa gat gat aaa gga aaa agg aaa cga aaa agt tct Thr Gln Ala Gly Lys Asp Asp Lys Gly Lys Arg Lys Arg Lys Ser Ser	2352
770 775 780	
aca tct ggc tca gat ttt gat act aaa aag ggc aaa tca gct aag agc Thr Ser Gly Ser Asp Phe Asp Thr Lys Lys Gly Lys Ser Ala Lys Ser	2400
785 790 795 800	
tct ata att tct aaa aag aaa cga caa acc cag tct gag tct tct aat Ser Ile Ile Ser Lys Lys Lys Arg Gln Thr Gln Ser Glu Ser Ser Asn	2448
805 810 815	
tat gac tca gaa tta gaa aaa gag ata aag agc atg agt aaa att ggt Tyr Asp Ser Glu Leu Glu Lys Glu Ile Lys Ser Met Ser Lys Ile Gly	2496
820 825 830	

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gct gcc aga acc acc aaa aaa aga att cca aat aca aaa gat ttt gac Ala Ala Arg Thr Thr Lys Lys Arg Ile Pro Asn Thr Lys Asp Phe Asp 835 840 845	2544
tct tct gaa gat gag aaa cac agc aaa aaa gga atg gat aat caa ggg Ser Ser Glu Asp Glu Lys His Ser Lys Lys Gly Met Asp Asn Gln Gly 850 855 860	2592
cac aaa aat ttg aag acc tca caa gaa gga tca tct gat gat gct gaa His Lys Asn Leu Lys Thr Ser Gln Glu Gly Ser Ser Asp Asp Ala Glu 865 870 875 880	2640
aga aaa caa gag aga gag act ttc tct tca gca gaa ggc aca gtt gat Arg Lys Gln Glu Arg Glu Thr Phe Ser Ser Ala Glu Gly Thr Val Asp 885 890 895	2688
aaa gac acg acc atc atg gaa tta aga gat cga ctt cct aag aag cag Lys Asp Thr Thr Ile Met Glu Leu Arg Asp Arg Leu Pro Lys Lys Gln 900 905 910	2736
caa gca agt gct tcc act gat ggt gtc gat aag ctt tct ggg aaa gag Gln Ala Ser Ala Ser Thr Asp Gly Val Asp Lys Leu Ser Gly Lys Glu 915 920 925	2784
cag agt ttt act tct ttg gaa gtt aga aaa gtt gct gaa act aaa gaa Gln Ser Phe Thr Ser Leu Glu Val Arg Lys Val Ala Glu Thr Lys Glu 930 935 940	2832
aag agc aag cat ctc aaa acc aaa aca tgt aaa aaa gta cag gat ggc Lys Ser Lys His Leu Lys Thr Lys Thr Cys Lys Lys Val Gln Asp Gly 945 950 955 960	2880
tta tct gat att gca gag aaa ttc cta aag aaa gac cag agc gat gaa Leu Ser Asp Ile Ala Glu Lys Phe Leu Lys Lys Asp Gln Ser Asp Glu 965 970 975	2928
act tct gaa gat gat aaa aag cag agc aaa aag gga act gaa gaa aaa Thr Ser Glu Asp Asp Lys Lys Gln Ser Lys Lys Gly Thr Glu Glu Lys 980 985 990	2976
aag aaa cct tca gac ttt aag aaa aaa gta att aaa atg gaa caa cag Lys Lys Pro Ser Asp Phe Lys Lys Lys Val Ile Lys Met Glu Gln Gln 995 1000 1005	3024
tat gaa tct tca tct gat ggc act gaa aag tta cct gag cga gaa Tyr Glu Ser Ser Ser Asp Gly Thr Glu Lys Leu Pro Glu Arg Glu 1010 1015 1020	3069
gaa att tgt cat ttt cct aag ggc ata aaa caa att aag aat gga Glu Ile Cys His Phe Pro Lys Gly Ile Lys Gln Ile Lys Asn Gly 1025 1030 1035	3114
aca act gat gga gaa aag aaa agt aaa aaa ata aga gat aaa act Thr Thr Asp Gly Glu Lys Lys Ser Lys Lys Ile Arg Asp Lys Thr 1040 1045 1050	3159
tct aaa aag aag gat gaa tta tct gat tat gct gag aag tca aca Ser Lys Lys Lys Asp Glu Leu Ser Asp Tyr Ala Glu Lys Ser Thr	3204

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aat gga gca tat ggt aga gag aag aaa agg tgc aag ttg ctt gga Asn Gly Ala Tyr Gly Arg Glu Lys Lys Arg Cys Lys Leu Leu Gly 1085 1090 1095			3294
aag agt tca agg aag aga caa gat tgc tca tca tct gat act gag Lys Ser Ser Arg Lys Arg Gln Asp Cys Ser Ser Ser Asp Thr Glu 1100 1105 1110			3339
aaa tat tcc atg aaa gaa gat ggt tgt aac tct tct gat aag aga Lys Tyr Ser Met Lys Glu Asp Gly Cys Asn Ser Ser Asp Lys Arg 1115 1120 1125			3384
ctg aaa aga ata gaa ttg agg gaa aga aga aat tta agt tca aag Leu Lys Arg Ile Glu Leu Arg Glu Arg Arg Asn Leu Ser Ser Lys 1130 1135 1140			3429
aga aat act aag gaa ata caa agt ggc tca tca tca tct gat gct Arg Asn Thr Lys Glu Ile Gln Ser Gly Ser Ser Ser Ser Asp Ala 1145 1150 1155			3474
gag gaa agt tct gaa gat aat aaa aag aag aag caa aga act tca Glu Glu Ser Ser Glu Asp Asn Lys Lys Lys Lys Gln Arg Thr Ser 1160 1165 1170			3519
tct aaa aag aag gca gtc att gtc aag gag aaa aag aga aac tcc Ser Lys Lys Lys Ala Val Ile Val Lys Glu Lys Lys Arg Asn Ser 1175 1180 1185			3564
cta aga aca agc act aaa agg aag caa gct gac att aca tcc tca Leu Arg Thr Ser Thr Lys Arg Lys Lys Gln Ala Asp Ile Thr Ser Ser 1190 1195 1200			3609
tct tct tct gat ata gaa gat gat gat cag aat tct ata ggt gag Ser Ser Ser Asp Ile Glu Asp Asp Asp Gln Asn Ser Ile Gly Glu 1205 1210 1215			3654
gga agc agc gat gaa cag aaa att aag cct gtc act gaa aat tta Gly Ser Ser Asp Glu Gln Lys Ile Lys Pro Val Thr Glu Asn Leu 1220 1225 1230			3699
gtg ctg tct tca cat act gga ttt tgc caa tct tca gga gat gaa Val Leu Ser Ser His Thr Gly Phe Cys Gln Ser Ser Gly Asp Glu 1235 1240 1245			3744
gcc tta tct aaa tca gtg cct gtc aca gtg gat gat gat gat gac Ala Leu Ser Lys Ser Val Pro Val Thr Val Asp Asp Asp Asp Asp 1250 1255 1260			3789
gac aat gat cct gag aat aga att gcc aag aag atg ctt tta gaa Asp Asn Asp Pro Glu Asn Arg Ile Ala Lys Lys Met Leu Leu Glu 1265 1270 1275			3834
gaa att aaa gcc aat ctt tcc tct gat gag gat gga tct tca gat			3879

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Glu Ile Lys Ala Asn Leu Ser Ser Asp Glu Asp Gly Ser Ser Asp	
1280 1285 1290	
gat gag cca gaa gaa ggg aaa aaa aga act gga aaa caa aat gaa	3924
Asp Glu Pro Glu Glu Gly Lys Lys Arg Thr Gly Lys Gln Asn Glu	
1295 1300 1305	
gaa aac cca gga gat gag gaa gca aaa aat caa gtc aat tct gaa	3969
Glu Asn Pro Gly Asp Glu Glu Ala Lys Asn Gln Val Asn Ser Glu	
1310 1315 1320	
tca gat tca gat tct gaa gaa tct aag aag cca aga tac aga cat	4014
Ser Asp Ser Asp Ser Glu Glu Ser Lys Lys Pro Arg Tyr Arg His	
1325 1330 1335	
agg ctt ttg cgg cac aaa ttg act gtg agt gac gga gaa tct gga	4059
Arg Leu Leu Arg His Lys Leu Thr Val Ser Asp Gly Glu Ser Gly	
1340 1345 1350	
gaa gaa aaa aag aca aag cct aaa gag cat aaa gaa gtc aaa ggc	4104
Glu Glu Lys Lys Thr Lys Pro Lys Glu His Lys Glu Val Lys Gly	
1355 1360 1365	
aga aac aga aga aag gtg agc agt gaa gat tca gaa gat tct gat	4149
Arg Asn Arg Arg Lys Val Ser Ser Glu Asp Ser Glu Asp Ser Asp	
1370 1375 1380	
ttt cag gaa tca gga gtt agt gaa gaa gtt agt gaa tcc gaa gat	4194
Phe Gln Glu Ser Gly Val Ser Glu Glu Val Ser Glu Ser Glu Asp	
1385 1390 1395	
gaa cag cgg ccc aga aca agg tct gca aag aaa gca gag ttg gaa	4239
Glu Gln Arg Pro Arg Thr Arg Ser Ala Lys Lys Ala Glu Leu Glu	
1400 1405 1410	
gaa aat cag cgg agc tat aaa cag aaa aag aaa agg cga cgt att	4284
Glu Asn Gln Arg Ser Tyr Lys Gln Lys Lys Lys Arg Arg Arg Ile	
1415 1420 1425	
aag gtt caa gaa gat tca tcc agt gaa aac aag agt aat tct gag	4329
Lys Val Gln Glu Asp Ser Ser Ser Glu Asn Lys Ser Asn Ser Glu	
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gaa gaa gag gag gaa aaa gaa gag gag gag gaa gag gag gag gag	4374
Glu Glu Glu Glu Glu Lys Glu Glu Glu Glu Glu Glu Glu Glu	
1445 1450 1455	
gag gaa gag gag gag gaa gat gaa aat gat gat tcc aag tct cct	4419
Glu Glu Glu Glu Glu Glu Asp Glu Asn Asp Asp Ser Lys Ser Pro	
1460 1465 1470	
gga aaa ggc aga aag aaa att cgg aag att ctt aaa gat gat aaa	4464
Gly Lys Gly Arg Lys Lys Ile Arg Lys Ile Leu Lys Asp Asp Lys	
1475 1480 1485	
ctg aga aca gaa aca caa aat gct ctt aag gaa gag gaa gag aga	4509
Leu Arg Thr Glu Thr Gln Asn Ala Leu Lys Glu Glu Glu Glu Arg	
1490 1495 1500	

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Arg	Lys	Arg	Ile	Ala	Glu	Arg	Glu	Arg	Glu	Arg	Glu	Lys	Leu	Arg	
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gag	gtg	ata	gaa	att	gaa	gat	gct	tca	ccc	acc	aag	tgt	cca	ata	4599
Glu	Val	Ile	Glu	Ile	Glu	Asp	Ala	Ser	Pro	Thr	Lys	Cys	Pro	Ile	
	1520					1525					1530				
aca	acc	aag	ttg	gtt	tta	gat	gaa	gat	gaa	gaa	acc	aaa	gaa	cct	4644
Thr	Thr	Lys	Leu	Val	Leu	Asp	Glu	Asp	Glu	Glu	Thr	Lys	Glu	Pro	
	1535					1540					1545				
tta	gtg	cag	gtt	cat	aga	aat	atg	gtt	atc	aaa	ttg	aaa	ccc	cat	4689
Leu	Val	Gln	Val	His	Arg	Asn	Met	Val	Ile	Lys	Leu	Lys	Pro	His	
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caa	gta	gat	ggg	gtt	cag	ttt	atg	tgg	gat	tgc	tgc	tgt	gag	tct	4734
Gln	Val	Asp	Gly	Val	Gln	Phe	Met	Trp	Asp	Cys	Cys	Cys	Glu	Ser	
	1565					1570					1575				
gtg	aaa	aaa	aca	aag	aaa	tct	cca	ggg	tca	gga	tgc	att	ctt	gcc	4779
Val	Lys	Lys	Thr	Lys	Lys	Ser	Pro	Gly	Ser	Gly	Cys	Ile	Leu	Ala	
	1580					1585					1590				
cac	tgt	atg	ggc	ctt	ggg	aag	act	tta	cag	gtg	gta	agt	ttt	ctt	4824
His	Cys	Met	Gly	Leu	Gly	Lys	Thr	Leu	Gln	Val	Val	Ser	Phe	Leu	
	1595					1600					1605				
cat	aca	gtt	ctt	ttg	tgt	gac	aaa	ctg	gat	ttc	agc	acg	gcg	tta	4869
His	Thr	Val	Leu	Leu	Cys	Asp	Lys	Leu	Asp	Phe	Ser	Thr	Ala	Leu	
	1610					1615					1620				
gtg	gtt	tgt	cct	ctt	aat	act	gct	ttg	aat	tgg	atg	aat	gaa	ttt	4914
Val	Val	Cys	Pro	Leu	Asn	Thr	Ala	Leu	Asn	Trp	Met	Asn	Glu	Phe	
	1625					1630					1635				
gag	aag	tgg	caa	gag	gga	tta	aaa	gat	gat	gag	aag	ctt	gag	gtt	4959
Glu	Lys	Trp	Gln	Glu	Gly	Leu	Lys	Asp	Asp	Glu	Lys	Leu	Glu	Val	
	1640					1645					1650				
tct	gaa	tta	gca	act	gtg	aaa	cgt	cct	cag	gag	aga	agc	tac	atg	5004
Ser	Glu	Leu	Ala	Thr	Val	Lys	Arg	Pro	Gln	Glu	Arg	Ser	Tyr	Met	
	1655					1660					1665				
ctg	cag	agg	tgg	caa	gaa	gat	ggg	ggg	gtt	atg	atc	ata	ggc	tat	5049
Leu	Gln	Arg	Trp	Gln	Glu	Asp	Gly	Gly	Val	Met	Ile	Ile	Gly	Tyr	
	1670					1675					1680				
gag	atg	tat	aga	aat	ctt	gct	caa	gga	agg	aat	gtg	aag	agt	cgg	5094
Glu	Met	Tyr	Arg	Asn	Leu	Ala	Gln	Gly	Arg	Asn	Val	Lys	Ser	Arg	
	1685					1690					1695				
aaa	ctt	aaa	gaa	ata	ttt	aac	aaa	gct	ttg	gtt	gat	cca	ggc	cct	5139
Lys	Leu	Lys	Glu	Ile	Phe	Asn	Lys	Ala	Leu	Val	Asp	Pro	Gly	Pro	
	1700					1705					1710				
gat	ttt	gtt	gtt	tgt	gat	gaa	ggc	cat	att	cta	aaa	aat	gaa	gca	5184
Asp	Phe	Val	Val	Cys	Asp	Glu	Gly	His	Ile	Leu	Lys	Asn	Glu	Ala	
	1715					1720					1725				

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tct gct gtt tct aaa gct atg aat tct ata cga tca agg agg agg	5229
Ser Ala Val Ser Lys Ala Met Asn Ser Ile Arg Ser Arg Arg Arg	
1730 1735 1740	
att att tta aca gga aca cca ctt caa aat aac cta att gag tat	5274
Ile Ile Leu Thr Gly Thr Pro Leu Gln Asn Asn Leu Ile Glu Tyr	
1745 1750 1755	
cat tgt atg gtt aat ttt atc aag gaa aat tta ctt gga tcc att	5319
His Cys Met Val Asn Phe Ile Lys Glu Asn Leu Leu Gly Ser Ile	
1760 1765 1770	
aag gag ttc agg aat aga ttt ata aat cca att caa aat ggt cag	5364
Lys Glu Phe Arg Asn Arg Phe Ile Asn Pro Ile Gln Asn Gly Gln	
1775 1780 1785	
tgt gca gat tct acc atg gta gat gtc aga gtg atg aaa aaa cgt	5409
Cys Ala Asp Ser Thr Met Val Asp Val Arg Val Met Lys Lys Arg	
1790 1795 1800	
gct cac att ctc tat gag atg tta gct gga tgt gtt cag agg aaa	5454
Ala His Ile Leu Tyr Glu Met Leu Ala Gly Cys Val Gln Arg Lys	
1805 1810 1815	
gat tat aca gca tta aca aaa ttc ttg cct cca aaa cac gaa tat	5499
Asp Tyr Thr Ala Leu Thr Lys Phe Leu Pro Pro Lys His Glu Tyr	
1820 1825 1830	
gtg tta gct gtg aga atg act tct att cag tgc aag ctc tat cag	5544
Val Leu Ala Val Arg Met Thr Ser Ile Gln Cys Lys Leu Tyr Gln	
1835 1840 1845	
tac tac tta gat cac tta aca ggt gtg ggc aat aat agt gaa ggt	5589
Tyr Tyr Leu Asp His Leu Thr Gly Val Gly Asn Asn Ser Glu Gly	
1850 1855 1860	
gga aga gga aag gca ggt gca aag ctt ttc caa gat ttt cag atg	5634
Gly Arg Gly Lys Ala Gly Ala Lys Leu Phe Gln Asp Phe Gln Met	
1865 1870 1875	
tta agt aga ata tgg act cat cct tgg tgt ttg cag cta gac tac	5679
Leu Ser Arg Ile Trp Thr His Pro Trp Cys Leu Gln Leu Asp Tyr	
1880 1885 1890	
att agc aaa gaa aat aag ggt tat ttt gat gaa gac agt atg gat	5724
Ile Ser Lys Glu Asn Lys Gly Tyr Phe Asp Glu Asp Ser Met Asp	
1895 1900 1905	
gaa ttt ata gcc tca gat tct gat gaa acc tcc atg agt tta agc	5769
Glu Phe Ile Ala Ser Asp Ser Asp Glu Thr Ser Met Ser Leu Ser	
1910 1915 1920	
tcc gat gat tat aca aaa aag aag aaa aaa ggg aaa aag ggg aaa	5814
Ser Asp Asp Tyr Thr Lys Lys Lys Lys Lys Gly Lys Lys Gly Lys	
1925 1930 1935	
aaa gat agt agc tca agt gga agt ggc agt gac aat gat gtt gaa	5859
Lys Asp Ser Ser Ser Ser Gly Ser Gly Ser Asp Asn Asp Val Glu	

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1940	1945	1950	
gtg att aag gtc tgg aat tca Val Ile Lys Val Trp Asn Ser 1955	aga tct cgg gga ggt Arg Ser Arg Gly Gly 1960	ggt ggt gaa gga Gly Gly Glu Gly 1965	5904
aat gtg gat gaa aca gga aac Asn Val Asp Glu Thr Gly Asn 1970	aat cct tct gtt tct Asn Pro Ser Val Ser 1975	tta aaa ctg Leu Lys Leu 1980	5949
gaa gaa agt aaa gct act tct Glu Glu Ser Lys Ala Thr Ser 1985	tct tct tct aat cca agc Ser Ser Ser Asn Pro Ser 1990	agc cca gct Ser Pro Ala 1995	5994
cca gac tgg tac aaa gat ttt Pro Asp Trp Tyr Lys Asp Phe 2000	gtt aca gat gct gat Val Thr Asp Ala Asp 2005	gct gag gtt Ala Glu Val 2010	6039
tta gag cat tct ggg aaa atg Leu Glu His Ser Gly Lys Met 2015	gta ctt ctc ttt Val Leu Leu Phe 2020	gaa att ctt cga Glu Ile Leu Arg 2025	6084
atg gca gag gaa att ggg gat Met Ala Glu Glu Ile Gly Asp 2030	aaa gtc ctt gtt ttc Lys Val Leu Val Phe 2035	agc cag tcc Ser Gln Ser 2040	6129
ctc ata tct ctg gac ttg att Leu Ile Ser Leu Asp Leu Ile 2045	gaa gat ttt ctt Glu Asp Phe Leu 2050	gaa tta gct agt Glu Leu Ala Ser 2055	6174
agg gag aag aca gaa gat aaa Arg Glu Lys Thr Glu Asp Lys 2060	gat aaa ccc ctt Asp Lys Pro Leu 2065	att tat aaa ggt Ile Tyr Lys Gly 2070	6219
gag ggg aag tgg ctt cga aac Glu Gly Lys Trp Leu Arg Asn 2075	att gac tat tac Ile Asp Tyr Tyr 2080	cgt tta gat ggt Arg Leu Asp Gly 2085	6264
tcc act act gca cag tca agg Ser Thr Thr Ala Gln Ser Arg 2090	aag aag tgg gct Lys Lys Trp Ala 2095	gaa gaa ttt aat Glu Glu Phe Asn 2100	6309
gat gaa act aat gtg aga gga Asp Glu Thr Asn Val Arg Gly 2105	cga tta ttt atc Arg Leu Phe Ile 2110	att tct act aaa Ile Ser Thr Lys 2115	6354
gca gga tct cta gga att aat Ala Gly Ser Leu Gly Ile Asn 2120	ctg gta gct gct Leu Val Ala Ala 2125	aat cga gta att Asn Arg Val Ile 2130	6399
ata ttc gac gct tct tgg aat Ile Phe Asp Ala Ser Trp Asn 2135	cca tct tat gac Pro Ser Tyr Asp 2140	atc cag agt ata Ile Gln Ser Ile 2145	6444
ttc aga gtt tat cgc ttt gga Phe Arg Val Tyr Arg Phe Gly 2150	caa act aag cct Gln Thr Lys Pro 2155	gtt tat gta tat Val Tyr Val Tyr 2160	6489
agg ttc tta gct cag gga acc atg gaa gat aag att tat gat cgg			6534

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Arg	Phe	Leu	Ala	Gln	Gly	Thr	Met	Glu	Asp	Lys	Ile	Tyr	Asp	Arg	
2165						2170					2175				
caa	gta	act	aag	cag	tca	ctg	tct	ttt	cga	gtt	gtt	gat	cag	cag	6579
Gln	Val	Thr	Lys	Gln	Ser	Leu	Ser	Phe	Arg	Val	Val	Asp	Gln	Gln	
2180						2185					2190				
cag	gtg	gag	cgt	cat	ttt	act	atg	aat	gag	ctt	act	gaa	ctt	tat	6624
Gln	Val	Glu	Arg	His	Phe	Thr	Met	Asn	Glu	Leu	Thr	Glu	Leu	Tyr	
2195						2200					2205				
act	ttt	gag	cca	gac	tta	tta	gat	gac	cct	aat	tca	gaa	aag	aag	6669
Thr	Phe	Glu	Pro	Asp	Leu	Leu	Asp	Asp	Pro	Asn	Ser	Glu	Lys	Lys	
2210						2215					2220				
aag	aag	agg	gat	act	ccc	atg	ctg	cca	aag	gat	acc	ata	ctt	gca	6714
Lys	Lys	Arg	Asp	Thr	Pro	Met	Leu	Pro	Lys	Asp	Thr	Ile	Leu	Ala	
2225						2230					2235				
gag	ctc	ctt	cag	ata	cat	aaa	gaa	cac	att	gta	gga	tac	cat	gaa	6759
Glu	Leu	Leu	Gln	Ile	His	Lys	Glu	His	Ile	Val	Gly	Tyr	His	Glu	
2240						2245					2250				
cat	gat	tct	ctt	ttg	gac	cac	aaa	gaa	gaa	gaa	gag	ttg	act	gaa	6804
His	Asp	Ser	Leu	Leu	Asp	His	Lys	Glu	Glu	Glu	Glu	Leu	Thr	Glu	
2255						2260					2265				
gaa	gaa	aga	aaa	gca	gct	tggt	gct	gag	tat	gaa	gca	gag	aag	aag	6849
Glu	Glu	Arg	Lys	Ala	Ala	Trp	Ala	Glu	Tyr	Glu	Ala	Glu	Lys	Lys	
2270						2275					2280				
gta	ctg	acc	atg	cgt	ttc	aac	ata	cca	act	ggg	acc	aat	tta	ccc	6894
Val	Leu	Thr	Met	Arg	Phe	Asn	Ile	Pro	Thr	Gly	Thr	Asn	Leu	Pro	
2285						2290					2295				
cct	gtc	agt	ttc	aac	tct	caa	act	cct	tat	att	cct	ttc	aat	ttg	6939
Pro	Val	Ser	Phe	Asn	Ser	Gln	Thr	Pro	Tyr	Ile	Pro	Phe	Asn	Leu	
2300						2305					2310				
gga	gcc	ctg	tca	gca	atg	agt	aat	caa	cag	ctg	gag	gac	ctc	att	6984
Gly	Ala	Leu	Ser	Ala	Met	Ser	Asn	Gln	Gln	Leu	Glu	Asp	Leu	Ile	
2315						2320					2325				
aat	caa	gga	aga	gaa	aaa	gtt	gta	gaa	gca	aca	aac	agt	gtg	aca	7029
Asn	Gln	Gly	Arg	Glu	Lys	Val	Val	Glu	Ala	Thr	Asn	Ser	Val	Thr	
2330						2335					2340				
gca	gtg	agg	att	caa	cct	ctt	gag	gat	ata	att	tca	gct	gta	tggt	7074
Ala	Val	Arg	Ile	Gln	Pro	Leu	Glu	Asp	Ile	Ile	Ser	Ala	Val	Trp	
2345						2350					2355				
aag	gag	aac	atg	aat	ctc	tca	gag	gcc	caa	gta	cag	gcg	tta	gca	7119
Lys	Glu	Asn	Met	Asn	Leu	Ser	Glu	Ala	Gln	Val	Gln	Ala	Leu	Ala	
2360						2365					2370				
tta	agt	aga	caa	gcc	agc	cag	gag	ctt	gat	gtt	aaa	cga	aga	gaa	7164
Leu	Ser	Arg	Gln	Ala	Ser	Gln	Glu	Leu	Asp	Val	Lys	Arg	Arg	Glu	
2375						2380					2385				

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gca atc tac aat gat gta ttg aca aaa caa cag atg tta atc agc 7209
Ala Ile Tyr Asn Asp Val Leu Thr Lys Gln Gln Met Leu Ile Ser
2390 2395 2400

tgt gtt cag cga ata ctt atg aac aga agg ctc cag cag cag tac 7254
Cys Val Gln Arg Ile Leu Met Asn Arg Arg Leu Gln Gln Gln Tyr
2405 2410 2415

aat cag cag caa cag caa caa atg act tat caa caa gca aca ctg 7299
Asn Gln Gln Gln Gln Gln Gln Met Thr Tyr Gln Gln Ala Thr Leu
2420 2425 2430

ggc cac ctc atg atg cca aag ccc cca aat ttg atc atg aat cct 7344
Gly His Leu Met Met Pro Lys Pro Pro Asn Leu Ile Met Asn Pro
2435 2440 2445

tct aac tac cag cag att gat atg aga gga atg tat cag cca gtg 7389
Ser Asn Tyr Gln Gln Ile Asp Met Arg Gly Met Tyr Gln Pro Val
2450 2455 2460

gct ggt ggt atg cag cca cca cca tta cag cgt gca cca ccc cca 7434
Ala Gly Gly Met Gln Pro Pro Pro Leu Gln Arg Ala Pro Pro Pro
2465 2470 2475

atg aga agc aaa aat cca gga cct tcc caa ggg aaa tca atg tga 7479
Met Arg Ser Lys Asn Pro Gly Pro Ser Gln Gly Lys Ser Met
2480 2485 2490

<210> 2
<211> 2492
<212> PRT
<213> Homo sapiens

<220>
<221> misc_feature
<222> (488)..(488)
<223> The 'Xaa' at location 488 stands for Ser.

<400> 2

Met Thr Ala Glu Pro Met Ser Glu Ser Lys Leu Asn Thr Leu Val Gln
1 5 10 15

Lys Leu His Asp Phe Leu Ala His Ser Ser Glu Glu Ser Glu Glu Thr
20 25 30

Ser Ser Pro Pro Arg Leu Ala Met Asn Gln Asn Thr Asp Lys Ile Ser
35 40 45

Gly Ser Gly Ser Asn Ser Asp Met Met Glu Asn Ser Lys Glu Glu Gly
50 55 60

Thr Ser Ser Ser Glu Lys Ser Lys Ser Ser Gly Ser Ser Arg Ser Lys
65 70 75 80

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Arg Lys Pro Ser Ile Val Thr Lys Tyr Val Glu Ser Asp Asp Glu Lys
85 90 95

Pro Leu Asp Asp Glu Thr Val Asn Glu Asp Ala Ser Asn Glu Asn Ser
100 105 110

Glu Asn Asp Ile Thr Met Gln Ser Leu Pro Lys Gly Thr Val Ile Val
115 120 125

Gln Pro Glu Pro Val Leu Asn Glu Asp Lys Asp Asp Phe Lys Gly Pro
130 135 140

Glu Phe Arg Ser Arg Ser Lys Met Lys Thr Glu Asn Leu Lys Lys Arg
145 150 155 160

Gly Glu Asp Gly Leu His Gly Ile Val Ser Cys Thr Ala Cys Gly Gln
165 170 175

Gln Val Asn His Phe Gln Lys Asp Ser Ile Tyr Arg His Pro Ser Leu
180 185 190

Gln Val Leu Ile Cys Lys Asn Cys Phe Lys Tyr Tyr Met Ser Asp Asp
195 200 205

Ile Ser Arg Asp Ser Asp Gly Met Asp Glu Gln Cys Arg Trp Cys Ala
210 215 220

Glu Gly Gly Asn Leu Ile Cys Cys Asp Phe Cys His Asn Ala Phe Cys
225 230 235 240

Lys Lys Cys Ile Leu Arg Asn Leu Gly Arg Lys Glu Leu Ser Thr Ile
245 250 255

Met Asp Glu Asn Asn Gln Trp Tyr Cys Tyr Ile Cys His Pro Glu Pro
260 265 270

Leu Leu Asp Leu Val Thr Ala Cys Asn Ser Val Phe Glu Asn Leu Glu
275 280 285

Gln Leu Leu Gln Gln Asn Lys Lys Lys Ile Lys Val Asp Ser Glu Lys
290 295 300

Ser Asn Lys Val Tyr Glu His Thr Ser Arg Phe Ser Pro Lys Lys Thr

305		310		315		320									
Ser	Ser	Asn	Cys	Asn	Gly	Glu	Glu	Lys	Lys	Leu	Asp	Asp	Ser	Cys	Ser
				325					330					335	
Gly	Ser	Val	Thr	Tyr	Ser	Tyr	Ser	Ala	Leu	Ile	Val	Pro	Lys	Glu	Met
			340					345					350		
Ile	Lys	Lys	Ala	Lys	Lys	Leu	Ile	Glu	Thr	Thr	Ala	Asn	Met	Asn	Ser
		355					360					365			
Ser	Tyr	Val	Lys	Phe	Leu	Lys	Gln	Ala	Thr	Asp	Asn	Ser	Glu	Ile	Ser
	370					375					380				
Ser	Ala	Thr	Lys	Leu	Arg	Gln	Leu	Lys	Ala	Phe	Lys	Ser	Val	Leu	Ala
385					390					395					400
Asp	Ile	Lys	Lys	Ala	His	Leu	Ala	Leu	Glu	Glu	Asp	Leu	Asn	Ser	Glu
				405					410					415	
Phe	Arg	Ala	Met	Asp	Ala	Val	Asn	Lys	Glu	Lys	Asn	Thr	Lys	Glu	His
			420					425					430		
Lys	Val	Ile	Asp	Ala	Lys	Phe	Glu	Thr	Lys	Ala	Arg	Lys	Gly	Glu	Lys
		435					440					445			
Pro	Cys	Ala	Leu	Glu	Lys	Lys	Asp	Ile	Ser	Lys	Ser	Glu	Ala	Lys	Leu
	450					455					460				
Ser	Arg	Lys	Gln	Val	Asp	Ser	Glu	His	Met	His	Gln	Asn	Val	Pro	Thr
465					470					475					480
Glu	Glu	Gln	Arg	Thr	Asn	Lys	Xaa	Thr	Gly	Gly	Glu	His	Lys	Lys	Ser
				485					490					495	
Asp	Arg	Lys	Glu	Glu	Pro	Gln	Tyr	Glu	Pro	Ala	Asn	Thr	Ser	Glu	Asp
			500					505					510		
Leu	Asp	Met	Asp	Ile	Val	Ser	Val	Pro	Ser	Ser	Val	Pro	Glu	Asp	Ile
		515					520					525			
Phe	Glu	Asn	Leu	Glu	Thr	Ala	Met	Glu	Val	Gln	Ser	Ser	Val	Asp	His
	530					535					540				

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Gln Gly Asp Gly Ser Ser Gly Thr Glu Gln Glu Val Glu Ser Ser Ser
 545 550 555 560

Val Lys Leu Asn Ile Ser Ser Lys Asp Asn Arg Gly Gly Ile Lys Ser
 565 570 575

Lys Thr Thr Ala Lys Val Thr Lys Glu Leu Tyr Val Lys Leu Thr Pro
 580 585 590

Val Ser Leu Pro Asn Ser Pro Ile Lys Gly Ala Asp Cys Gln Glu Val
 595 600 605

Pro Gln Asp Lys Asp Gly Tyr Lys Ser Cys Gly Leu Asn Pro Lys Leu
 610 615 620

Glu Lys Cys Gly Leu Gly Gln Glu Asn Ser Asp Asn Glu His Leu Val
 625 630 635 640

Glu Asn Glu Val Ser Leu Leu Leu Glu Glu Ser Asp Leu Arg Arg Ser
 645 650 655

Pro Arg Val Lys Thr Thr Pro Leu Arg Arg Pro Thr Glu Thr Asn Pro
 660 665 670

Val Thr Ser Asn Ser Asp Glu Glu Cys Asn Glu Thr Val Lys Glu Lys
 675 680 685

Gln Lys Leu Ser Val Pro Val Arg Lys Lys Asp Lys Arg Asn Ser Ser
 690 695 700

Asp Ser Ala Ile Asp Asn Pro Lys Pro Asn Lys Leu Pro Lys Ser Lys
 705 710 715 720

Gln Ser Glu Thr Val Asp Gln Asn Ser Asp Ser Asp Glu Met Leu Ala
 725 730 735

Ile Leu Lys Gly Val Ser Arg Met Ser His Ser Ser Ser Ser Asp Thr
 740 745 750

Asp Ile Asn Glu Ile His Thr Asn His Lys Thr Leu Tyr Asp Leu Lys
 755 760 765

Thr Gln Ala Gly Lys Asp Asp Lys Gly Lys Arg Lys Arg Lys Ser Ser
 770 775 780

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Thr Ser Gly Ser Asp Phe Asp Thr Lys Lys Gly Lys Ser Ala Lys Ser
785 790 795 800

Ser Ile Ile Ser Lys Lys Lys Arg Gln Thr Gln Ser Glu Ser Ser Asn
805 810 815

Tyr Asp Ser Glu Leu Glu Lys Glu Ile Lys Ser Met Ser Lys Ile Gly
820 825 830

Ala Ala Arg Thr Thr Lys Lys Arg Ile Pro Asn Thr Lys Asp Phe Asp
835 840 845

Ser Ser Glu Asp Glu Lys His Ser Lys Lys Gly Met Asp Asn Gln Gly
850 855 860

His Lys Asn Leu Lys Thr Ser Gln Glu Gly Ser Ser Asp Asp Ala Glu
865 870 875 880

Arg Lys Gln Glu Arg Glu Thr Phe Ser Ser Ala Glu Gly Thr Val Asp
885 890 895

Lys Asp Thr Thr Ile Met Glu Leu Arg Asp Arg Leu Pro Lys Lys Gln
900 905 910

Gln Ala Ser Ala Ser Thr Asp Gly Val Asp Lys Leu Ser Gly Lys Glu
915 920 925

Gln Ser Phe Thr Ser Leu Glu Val Arg Lys Val Ala Glu Thr Lys Glu
930 935 940

Lys Ser Lys His Leu Lys Thr Lys Thr Cys Lys Lys Val Gln Asp Gly
945 950 955 960

Leu Ser Asp Ile Ala Glu Lys Phe Leu Lys Lys Asp Gln Ser Asp Glu
965 970 975

Thr Ser Glu Asp Asp Lys Lys Gln Ser Lys Lys Gly Thr Glu Glu Lys
980 985 990

Lys Lys Pro Ser Asp Phe Lys Lys Lys Val Ile Lys Met Glu Gln Gln
995 1000 1005

Tyr Glu Ser Ser Ser Asp Gly Thr Glu Lys Leu Pro Glu Arg Glu
1010 1015 1020

Glu Ile Cys His Phe Pro Lys Gly Ile Lys Gln Ile Lys Asn Gly
 1025 1030 1035
 Thr Thr Asp Gly Glu Lys Lys Ser Lys Lys Ile Arg Asp Lys Thr
 1040 1045 1050
 Ser Lys Lys Lys Asp Glu Leu Ser Asp Tyr Ala Glu Lys Ser Thr
 1055 1060 1065
 Gly Lys Gly Asp Ser Cys Asp Ser Ser Glu Asp Lys Lys Ser Lys
 1070 1075 1080
 Asn Gly Ala Tyr Gly Arg Glu Lys Lys Arg Cys Lys Leu Leu Gly
 1085 1090 1095
 Lys Ser Ser Arg Lys Arg Gln Asp Cys Ser Ser Ser Asp Thr Glu
 1100 1105 1110
 Lys Tyr Ser Met Lys Glu Asp Gly Cys Asn Ser Ser Asp Lys Arg
 1115 1120 1125
 Leu Lys Arg Ile Glu Leu Arg Glu Arg Arg Asn Leu Ser Ser Lys
 1130 1135 1140
 Arg Asn Thr Lys Glu Ile Gln Ser Gly Ser Ser Ser Ser Asp Ala
 1145 1150 1155
 Glu Glu Ser Ser Glu Asp Asn Lys Lys Lys Lys Gln Arg Thr Ser
 1160 1165 1170
 Ser Lys Lys Lys Ala Val Ile Val Lys Glu Lys Lys Arg Asn Ser
 1175 1180 1185
 Leu Arg Thr Ser Thr Lys Arg Lys Gln Ala Asp Ile Thr Ser Ser
 1190 1195 1200
 Ser Ser Ser Asp Ile Glu Asp Asp Asp Gln Asn Ser Ile Gly Glu
 1205 1210 1215
 Gly Ser Ser Asp Glu Gln Lys Ile Lys Pro Val Thr Glu Asn Leu
 1220 1225 1230
 Val Leu Ser Ser His Thr Gly Phe Cys Gln Ser Ser Gly Asp Glu

1235						1240						1245			
Ala	Leu	Ser	Lys	Ser	Val	Pro	Val	Thr	Val	Asp	Asp	Asp	Asp	Asp	Asp
1250						1255					1260				
Asp	Asn	Asp	Pro	Glu	Asn	Arg	Ile	Ala	Lys	Lys	Met	Leu	Leu	Glu	
1265						1270					1275				
Glu	Ile	Lys	Ala	Asn	Leu	Ser	Ser	Asp	Glu	Asp	Gly	Ser	Ser	Asp	
1280						1285					1290				
Asp	Glu	Pro	Glu	Glu	Gly	Lys	Lys	Arg	Thr	Gly	Lys	Gln	Asn	Glu	
1295						1300					1305				
Glu	Asn	Pro	Gly	Asp	Glu	Glu	Ala	Lys	Asn	Gln	Val	Asn	Ser	Glu	
1310						1315					1320				
Ser	Asp	Ser	Asp	Ser	Glu	Glu	Ser	Lys	Lys	Pro	Arg	Tyr	Arg	His	
1325						1330					1335				
Arg	Leu	Leu	Arg	His	Lys	Leu	Thr	Val	Ser	Asp	Gly	Glu	Ser	Gly	
1340						1345					1350				
Glu	Glu	Lys	Lys	Thr	Lys	Pro	Lys	Glu	His	Lys	Glu	Val	Lys	Gly	
1355						1360					1365				
Arg	Asn	Arg	Arg	Lys	Val	Ser	Ser	Glu	Asp	Ser	Glu	Asp	Ser	Asp	
1370						1375					1380				
Phe	Gln	Glu	Ser	Gly	Val	Ser	Glu	Glu	Val	Ser	Glu	Ser	Glu	Asp	
1385						1390					1395				
Glu	Gln	Arg	Pro	Arg	Thr	Arg	Ser	Ala	Lys	Lys	Ala	Glu	Leu	Glu	
1400						1405					1410				
Glu	Asn	Gln	Arg	Ser	Tyr	Lys	Gln	Lys	Lys	Lys	Arg	Arg	Arg	Ile	
1415						1420					1425				
Lys	Val	Gln	Glu	Asp	Ser	Ser	Ser	Glu	Asn	Lys	Ser	Asn	Ser	Glu	
1430						1435					1440				
Glu	Glu	Glu	Glu	Glu	Lys	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	
1445						1450					1455				

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Glu Glu Glu Glu Glu Glu Asp Glu Asn Asp Asp Ser Lys Ser Pro
 1460 1465 1470

 Gly Lys Gly Arg Lys Lys Ile Arg Lys Ile Leu Lys Asp Asp Lys
 1475 1480 1485

 Leu Arg Thr Glu Thr Gln Asn Ala Leu Lys Glu Glu Glu Glu Arg
 1490 1495 1500

 Arg Lys Arg Ile Ala Glu Arg Glu Arg Glu Arg Glu Lys Leu Arg
 1505 1510 1515

 Glu Val Ile Glu Ile Glu Asp Ala Ser Pro Thr Lys Cys Pro Ile
 1520 1525 1530

 Thr Thr Lys Leu Val Leu Asp Glu Asp Glu Glu Thr Lys Glu Pro
 1535 1540 1545

 Leu Val Gln Val His Arg Asn Met Val Ile Lys Leu Lys Pro His
 1550 1555 1560

 Gln Val Asp Gly Val Gln Phe Met Trp Asp Cys Cys Cys Glu Ser
 1565 1570 1575

 Val Lys Lys Thr Lys Lys Ser Pro Gly Ser Gly Cys Ile Leu Ala
 1580 1585 1590

 His Cys Met Gly Leu Gly Lys Thr Leu Gln Val Val Ser Phe Leu
 1595 1600 1605

 His Thr Val Leu Leu Cys Asp Lys Leu Asp Phe Ser Thr Ala Leu
 1610 1615 1620

 Val Val Cys Pro Leu Asn Thr Ala Leu Asn Trp Met Asn Glu Phe
 1625 1630 1635

 Glu Lys Trp Gln Glu Gly Leu Lys Asp Asp Glu Lys Leu Glu Val
 1640 1645 1650

 Ser Glu Leu Ala Thr Val Lys Arg Pro Gln Glu Arg Ser Tyr Met
 1655 1660 1665

 Leu Gln Arg Trp Gln Glu Asp Gly Gly Val Met Ile Ile Gly Tyr
 1670 1675 1680

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Glu	Met	Tyr	Arg	Asn	Leu	Ala	Gln	Gly	Arg	Asn	Val	Lys	Ser	Arg
	1685					1690					1695			
Lys	Leu	Lys	Glu	Ile	Phe	Asn	Lys	Ala	Leu	Val	Asp	Pro	Gly	Pro
	1700					1705					1710			
Asp	Phe	Val	Val	Cys	Asp	Glu	Gly	His	Ile	Leu	Lys	Asn	Glu	Ala
	1715					1720					1725			
Ser	Ala	Val	Ser	Lys	Ala	Met	Asn	Ser	Ile	Arg	Ser	Arg	Arg	Arg
	1730					1735					1740			
Ile	Ile	Leu	Thr	Gly	Thr	Pro	Leu	Gln	Asn	Asn	Leu	Ile	Glu	Tyr
	1745					1750					1755			
His	Cys	Met	Val	Asn	Phe	Ile	Lys	Glu	Asn	Leu	Leu	Gly	Ser	Ile
	1760					1765					1770			
Lys	Glu	Phe	Arg	Asn	Arg	Phe	Ile	Asn	Pro	Ile	Gln	Asn	Gly	Gln
	1775					1780					1785			
Cys	Ala	Asp	Ser	Thr	Met	Val	Asp	Val	Arg	Val	Met	Lys	Lys	Arg
	1790					1795					1800			
Ala	His	Ile	Leu	Tyr	Glu	Met	Leu	Ala	Gly	Cys	Val	Gln	Arg	Lys
	1805					1810					1815			
Asp	Tyr	Thr	Ala	Leu	Thr	Lys	Phe	Leu	Pro	Pro	Lys	His	Glu	Tyr
	1820					1825					1830			
Val	Leu	Ala	Val	Arg	Met	Thr	Ser	Ile	Gln	Cys	Lys	Leu	Tyr	Gln
	1835					1840					1845			
Tyr	Tyr	Leu	Asp	His	Leu	Thr	Gly	Val	Gly	Asn	Asn	Ser	Glu	Gly
	1850					1855					1860			
Gly	Arg	Gly	Lys	Ala	Gly	Ala	Lys	Leu	Phe	Gln	Asp	Phe	Gln	Met
	1865					1870					1875			
Leu	Ser	Arg	Ile	Trp	Thr	His	Pro	Trp	Cys	Leu	Gln	Leu	Asp	Tyr
	1880					1885					1890			
Ile	Ser	Lys	Glu	Asn	Lys	Gly	Tyr	Phe	Asp	Glu	Asp	Ser	Met	Asp
	1895					1900					1905			

Glu Phe Ile Ala Ser Asp Ser Asp Glu Thr Ser Met Ser Leu Ser
 1910 1915 1920
 Ser Asp Asp Tyr Thr Lys Lys Lys Lys Lys Gly Lys Lys Gly Lys
 1925 1930 1935
 Lys Asp Ser Ser Ser Ser Gly Ser Gly Ser Asp Asn Asp Val Glu
 1940 1945 1950
 Val Ile Lys Val Trp Asn Ser Arg Ser Arg Gly Gly Gly Glu Gly
 1955 1960 1965
 Asn Val Asp Glu Thr Gly Asn Asn Pro Ser Val Ser Leu Lys Leu
 1970 1975 1980
 Glu Glu Ser Lys Ala Thr Ser Ser Ser Asn Pro Ser Ser Pro Ala
 1985 1990 1995
 Pro Asp Trp Tyr Lys Asp Phe Val Thr Asp Ala Asp Ala Glu Val
 2000 2005 2010
 Leu Glu His Ser Gly Lys Met Val Leu Leu Phe Glu Ile Leu Arg
 2015 2020 2025
 Met Ala Glu Glu Ile Gly Asp Lys Val Leu Val Phe Ser Gln Ser
 2030 2035 2040
 Leu Ile Ser Leu Asp Leu Ile Glu Asp Phe Leu Glu Leu Ala Ser
 2045 2050 2055
 Arg Glu Lys Thr Glu Asp Lys Asp Lys Pro Leu Ile Tyr Lys Gly
 2060 2065 2070
 Glu Gly Lys Trp Leu Arg Asn Ile Asp Tyr Tyr Arg Leu Asp Gly
 2075 2080 2085
 Ser Thr Thr Ala Gln Ser Arg Lys Lys Trp Ala Glu Glu Phe Asn
 2090 2095 2100
 Asp Glu Thr Asn Val Arg Gly Arg Leu Phe Ile Ile Ser Thr Lys
 2105 2110 2115
 Ala Gly Ser Leu Gly Ile Asn Leu Val Ala Ala Asn Arg Val Ile

2120		2125		2130
Ile Phe Asp Ala Ser Trp Asn Pro Ser Tyr Asp Ile Gln Ser Ile				
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Phe Arg Val Tyr Arg Phe Gly Gln Thr Lys Pro Val Tyr Val Tyr				
2150		2155		2160
Arg Phe Leu Ala Gln Gly Thr Met Glu Asp Lys Ile Tyr Asp Arg				
2165		2170		2175
Gln Val Thr Lys Gln Ser Leu Ser Phe Arg Val Val Asp Gln Gln				
2180		2185		2190
Gln Val Glu Arg His Phe Thr Met Asn Glu Leu Thr Glu Leu Tyr				
2195		2200		2205
Thr Phe Glu Pro Asp Leu Leu Asp Asp Pro Asn Ser Glu Lys Lys				
2210		2215		2220
Lys Lys Arg Asp Thr Pro Met Leu Pro Lys Asp Thr Ile Leu Ala				
2225		2230		2235
Glu Leu Leu Gln Ile His Lys Glu His Ile Val Gly Tyr His Glu				
2240		2245		2250
His Asp Ser Leu Leu Asp His Lys Glu Glu Glu Glu Leu Thr Glu				
2255		2260		2265
Glu Glu Arg Lys Ala Ala Trp Ala Glu Tyr Glu Ala Glu Lys Lys				
2270		2275		2280
Val Leu Thr Met Arg Phe Asn Ile Pro Thr Gly Thr Asn Leu Pro				
2285		2290		2295
Pro Val Ser Phe Asn Ser Gln Thr Pro Tyr Ile Pro Phe Asn Leu				
2300		2305		2310
Gly Ala Leu Ser Ala Met Ser Asn Gln Gln Leu Glu Asp Leu Ile				
2315		2320		2325
Asn Gln Gly Arg Glu Lys Val Val Glu Ala Thr Asn Ser Val Thr				
2330		2335		2340

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Ala Val Arg Ile Gln Pro Leu Glu Asp Ile Ile Ser Ala Val Trp
 2345 2350 2355

Lys Glu Asn Met Asn Leu Ser Glu Ala Gln Val Gln Ala Leu Ala
 2360 2365 2370

Leu Ser Arg Gln Ala Ser Gln Glu Leu Asp Val Lys Arg Arg Glu
 2375 2380 2385

Ala Ile Tyr Asn Asp Val Leu Thr Lys Gln Gln Met Leu Ile Ser
 2390 2395 2400

Cys Val Gln Arg Ile Leu Met Asn Arg Arg Leu Gln Gln Gln Tyr
 2405 2410 2415

Asn Gln Gln Gln Gln Gln Met Thr Tyr Gln Gln Ala Thr Leu
 2420 2425 2430

Gly His Leu Met Met Pro Lys Pro Pro Asn Leu Ile Met Asn Pro
 2435 2440 2445

Ser Asn Tyr Gln Gln Ile Asp Met Arg Gly Met Tyr Gln Pro Val
 2450 2455 2460

Ala Gly Gly Met Gln Pro Pro Pro Leu Gln Arg Ala Pro Pro Pro
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Met Arg Ser Lys Asn Pro Gly Pro Ser Gln Gly Lys Ser Met
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 ttttggaggc aagaattttg ttaatgctgt ataatctttc ctctgaacac atccagctaa 180
 catctcatag agaatgtgag cacgtttttt catcactctg acatctacca tggtagaatc 240
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tctcatatca atctgctggt agttagaagg attcatgatc aaatttgggg gctttggcat      180
catgaggtga cccagtgttg cttgttgata agtcatttgt tgctgttgct gctgattgta      240
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ggatgtgttc agaggaaaga ttatacagca ttaacaaaat tcttgctcc aaaacacgaa      180
tatgtgttag ctgtgagaat gacttctatt cagtgcagc tctatcagta ctacttagat      240
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caaagcccc aaatttgatc atgaatcctt ctaactacca gcagattgat atgagaggaa      180
tgtatcagcc agtggctggt ggtatgcagc caccaccatt acagcgtgca ccaccccaa      240
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